REMARKS / DISCUSSION OF ISSUES

The present amendment is submitted in response to the Final Office Action mailed 24 February, 2010. Claims 1-13 remain in this application. Claim 1 has been amended. In view of the remarks to follow and amendments above, reconsideration and allowance of this application are respectfully requested.

Interview Summary

Applicants appreciate the courtesy granted to Applicant's attorney, Michael A. Scaturro (Reg. No. 51,356), during a telephonic interview conducted on Wednesday, March 16, 2011. During the telephonic interview, a proposed amendment to claim 1 was discussed. The Examiner explained that while Tomi teaches that the light beam is applied to an opposite side of the optical recording medium than that taught by the invention, Tomi represents an exception to the rule. However, upon analyzing Challener, it was learned that this reference teaches a similar construction as that of Applicant's optical record carrier, however, there is no explicit recitation of the direction of light impinging said structure of Challener. It is therefore incumbent upon the Examiner to cite a reference that explicitly teaches Applicant's claim 1 amendment which recites, wherein said light entering the stack is applied to a side of said optical recording medium to which said substrate is closer than the recording layer. Discussion then turned to the proposition that Ishikawa does not teach the claim 1 limitation of *"a first dielectric layer having a thickness at a first amorphous minimum"*. The Examiner disagreed and maintains that this claim limitation is taught by Ishikawa because while Ishikawa does not solve for layer thickness, Ishikawa solves instead for wavelength. While Applicant's invention solves for layer thickness to attain an optimal wavelength, one can reasonably surmise that the equation of Ishikawa could be used to solve for either thickness or wavelength. Applicant's Attorney respectfully disagreed. Consequently, no agreement was reached.

Claim Rejections under 35 USC 103

A. Rejection of Claims 1- 13

In the Office Action, Claims 1 – 13 stand rejected under 35 U.S.C. §102(b) as being unpatentable over U.S. Patent No. 6,251,492 ("Tomie"), and further in view of U.S. Patent No. 5,214,636, ("Ishikawa") and U.S. Patent No. 5,620,792, ("Challener"). Applicants respectfully traverse the rejections.

Claims 1-13 are allowable

Independent Claim 1 has been amended herein to better define Applicant's invention over the combination of Tomie, Ishikawa and Challener. Claim 1 now recites limitations and/or features which are not disclosed by Tomie, Ishikawa and Challener, alone and in combination. Therefore, the cited portions of Tomie, Ishikawa and Challener do not anticipate claim 1, because the cited portions of Tomie, Ishikawa and Challener do not teach every element of claim 1. For example, the cited portions of Tomie, Ishikawa and Challener do not disclose or suggest, *wherein said light entering the stack is applied to a side of said optical recording medium to which said substrate is closer than the recording layer, wherein said light entering the stack first penetrates the substrate, and passes through to a thermal barrier layer, the first and second dielectric layers and the recording layer*, as recited in claim 1.

Tomie teaches away from the claim 1 limitation above. Instead, Tomie teaches a recording layer side light incident type optical recording medium . *See* Tomie, col. 2, lines 20-25.

Tomie teaches @ col. 1, lines 21-29:

> Investigation of the recording layer side light incident type optical recording medium has begun because it has a higher recording density than the conventional substrate side light incident type optical recording medium. However, practical recording and reproducing using this type recording medium has not been reported. Accordingly, it appears that various problems must be solved before this type of medium is available for practical use.

Ishikawa does not teach the structural configuration of the invention. Instead, Ishikawa teaches a transparent substrate 1 having a recording medium 2 formed on one face and a transparent dielectric thin film laminated layer 3 formed on the other face of the transparent substrate 1.

While Challener teaches the structural configuration of the invention, as shown in Fig. 1 and described at col. 3, lines 25-35, Challener does not teach:

, *wherein said light entering the stack is applied to a side of said optical recording medium to which said substrate is closer than the recording layer, wherein said light entering the stack first penetrates the substrate, and passes through to a thermal barrier layer, the first and second dielectric layers and the recording layer*, as recited in claim 1.

Challener only discloses that composite dielectric layer 14 also serves as a thermal barrier to protect substrate 12 from heat generated by the write light beam, and provides interference enhancement to increase the characteristic magneto-optic rotation angle and reduce the reflectivity of the medium.

In the Office Action, Ishikawa is cited for remedying a deficiency in Tomi. In particular, Ishikawa is cited for allegedly teaching the first dielectric layer having a thickness at a first amorphous reflection minimum. The Examiner points Applicants to Figs. 1-3 and Col. 3, line 60 – Col. 5, line 40 of Ishikawa. Applicants respectfully disagree. Upon a close reading of the cited portions of Ishikawa, it is evident that Ishikawa teaches a transparent dielectric thin film laminated layer 3 which includes high refractive index dielectric thin films 3a which are optical thin films having a refractive index higher than that of the transparent substrate 1, and low refractive index dielectric thin films 3b having a refractive index lower than that of the transparent substrate 1. These high refractive index dielectric thin films 3a and low refractive index dielectric thin films 3b are alternately laminated forming N layers, such that the first layer, as viewed from the side on which light beams used for the recording, erasing and playback are incident, is the high refractive index dielectric thin film 3a. Accordingly, the high refractive index dielectric thin film 3a is formed at the odd layers and the low refractive index dielectric thin film 3b at the even layers. The thicknesses of the high

refractive index dielectric thin film 3a and the low refractive index dielectric thin film 3b are respectively given by: equation (1), where d_k is the thickness of the k-th transparent dielectric thin film and .lambda is the wavelength of light beams used for recording, erasing and playing back information.

Ishikawa teaches that with the above arrangement, due to the interference effect of the multiple-layers, the reflectivity of the optical recording element of multiple-layer construction is equivalent to that of the optical recording element wherein neither the high refractive index dielectric thin film 3a nor low refractive index dielectric thin film 3b are provided. The reflectivity for the incident light beam of the wavelength lambda is thus the minimum value. In other words, the amount of reflected light becomes large when light having other wavelengths than the above wavelength lambda is incident on the optical recording element, and therefore the optical recording element has colors corresponding to the wavelengths of the reflected light.

Applicants respectfully note that Ishikawa teaches that given the uniformity and parallelism of the high and low reflective layers taught in Ishikawa an optimal value of lambda is determined. Unlike Ishikawa, where the thickness of the reflectivity layers are known, Applicants are directed to finding a thickness for the d1 layer such that an amorphous reflection is close to its minimum. Ishikawa is silent with regard to an "amorphous" minimum. Further, as will be described, it is not possible to utilize the equation of Ishikawa for the same purpose. Moreover, this is not a stated purpose of Ishikawa.

Applicant's specification recites that the optimal first dielectric layer thickness depends on the **"amorphous" reflection** having minimum and maximum levels at certain d_1 values. Paragraph 6 of Applicant's specification recites the following equation

$$d_1=(m^* \text{ lambda.}) / (2^*n) \qquad \text{Eq. 3 (Specification)}$$

where

m is an integer,

lambda is the wavelength of laser light,

n is the refractive index of the I_1 layer material.

As shown in Fig. 3 of Applicant's published specification, 2006/0109577, the optical performance periodically depends on the first dielectric layer thickness d_1. In particular, the amorphous and the crystalline reflection has minimum and maximum levels at certain $d_1$values. The optical contrast which is the difference between the crystalline and the amorphous reflection normalized by the crystalline reflection, consequently, varies with the same periodicity.

Ishikawa discloses eq. (1) at col. 4, which recites

$$n_k d_k = \text{lambda} / 2^m \qquad \text{Eq. 1 (Ishikawa)}$$

For comparison, solving for d_k in eq. 1, where k=1, yields

$$d_1 = \text{lambda} / n_1 * 2^m \qquad \text{Eq. 1 (Ishikawa)}$$

It is thus shown that Eq. 1 of Ishikawa and Eq. 3 of Applicant's specification are different equations, intended for different purposes and yielding different results. Therefore, it is respectfully submitted that Ishikawa does not teach or suggest, *a first dielectric layer having a thickness at a first amorphous reflection minimum*, as recited in claim 1.

Thus, the cited portions of Tomie, Ishikawa and Challener, considered individually or in combination, do not disclose or suggest at least one feature of claim 1. Hence claim 1 is allowable. Claims 2-13 depend from claim 1, and are therefore allowable at least by virtue of their dependence from allowable claim 1.

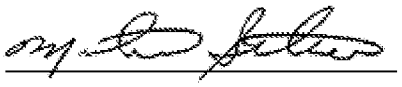
Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that all claims presently pending in the application, namely, Claims 1-13 are believed to be in

condition for allowance and patentably distinguishable over the art of record.

If the Examiner should have any questions concerning this communication or feels that an interview would be helpful, the Examiner is requested to call Mike Belk, Esq., Intellectual Property Counsel, Philips Electronics North America, at 914-333-9643.

Respectfully submitted,



Michael A. Scaturro
Reg. No. 51,356
Attorney for Applicant

Mailing Address:
Intellectual Property Counsel
Philips Electronics North America Corp.
P.O. Box 3001
345 Scarborough Road
Briarcliff Manor, New York 10510-8001